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L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:404903 CAPLUS
DOCUMENT NUMBER: 131:44584
ENTRY DATE: Entered STN: 01 Jul 1999
TITLE: Process for the preparation of pentafluoroethane, fluorination catalysts and process for the preparation thereof
INVENTOR(S): Kanemura, Takashi; Shibanuma, Takashi
PATENT ASSIGNEE(S): Daikin Industries Ltd., Japan
SOURCE: PCT Int. Appl., 75 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
INT. PATENT CLASSIF.:
MAIN: C07C019-08
SECONDARY: B01J023-26; B01J023-86; C07C017-087; C07C017-20; C07C017-21
CLASSIFICATION: 23-3 (Aliphatic Compounds)
Section cross-reference(s): 67
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9931032	A1	19990624	WO 1998-JP5284	19981124
W: US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 11171806	A2	19990629	JP 1997-342774	19971212
JP 3520900	B2	20040419		
EP 1038858	A1	20000927	EP 1998-954812	19981124 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6433233	B1	20020813	US 2000-581285	20000612
US 6503865	B1	20030107	US 2002-172970	20020618

PRIORITY APPLN. INFO.:
JP 1997-342774 A 19971212
WO 1998-JP5284 W 19981124
US 2000-581285 A3 20000612

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9931032	ICM	C07C019-08
	ICS	B01J023-26; B01J023-86; C07C017-087; C07C017-20; C07C017-21

WO 9931032	ECLA	B01J023/26; C07C017/20D4+19/08
EP 1038858	ECLA	B01J023/26; C07C017/20D4+19/08; C07C017/21+19/08 <--
US 6433233	NCL	570/165.000; 570/166.000; 570/168.000; 570/169.000
	ECLA	B01J023/26; C07C017/20D4+19/08; C07C017/21+19/08
US 6503865	NCL	502/224.000; 502/228.000; 502/307.000; 502/314.000; 502/315.000; 502/320.000
	ECLA	B01J023/26; C07C017/20D4+19/08; C07C017/21+19/08

OTHER SOURCE(S): CASREACT 131:44584

ABSTRACT:
Claimed are (i) a process for the preparation of pentafluoroethane by fluorinating a chlorinated carbon compound in the presence of a non-crystalline chromium catalyst comprising as the main component a chromium compound which contains at least one metal element selected from the group consisting of indium, gallium, cobalt, nickel, zinc and aluminum and in which the average valency of chromium ranges from +3.5 to +5.0; (ii) and chromium catalysts described above; and (iii) a process for the preparation thereof. The process for the preparation of pentafluoroethane makes
it possible to reduce the total amount of chlorofluoroethanes formed as byproducts without significant lowering in the activity for forming pentafluoroethane and compds. capable of being recycled to the reaction system as raw materials. Thus, HCFC-124 (2-chloro-1,1,1,2-tetrafluoroethane) was fluorinated by HF in the presence of fluorinated chromium oxide containing indium and 2 weight% graphite (preparation given) at 318° in the gas phase to give a mixture containing pentafluoroethane 66.4, HCFC-124 21.1, HCFC-123 (1,1-dichloro-2,2,2-trifluoroethane) 12.2, CFC-115 (1-chloro-1,1,2,2,2-pentafluoroethane) 0.022, a total of chlorofluoroethane byproducts (CFC-112, CFC-112a, CFC-113, CFC-113a, CFC-114, CFC-114a, and CFC-115) (11X) 0.052, and others 0.13% with the CFC-115/HFC-125 ratio of 0.03 and 11X/HFC-125 ratio of 0.08.

SUPPL. TERM: pentafluoroethane prepn; fluorination catalyst chromium compd

INDEX TERM: Fluorination
Fluorination catalysts
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 76-11-9P, CFC-112a 76-12-0P, CFC-112 76-13-1P, CFC-113 76-14-2P, CFC-114 76-15-3P, CFC-115 354-58-5P, CFC-113a 374-07-2P, CFC-114a
ROLE: BYP (Byproduct); PREP (Preparation)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 1308-38-9D, Chromium sesquioxide, chromium compound-based catalyst containing 7429-90-5D, Aluminum, chromium compound-based catalyst containing, uses 7439-95-4D, Magnesium, chromium compound-based catalyst containing, uses 7440-02-0D, Nickel, chromium compound-based catalyst containing, uses 7440-32-6D, Titanium, chromium compound-based catalyst containing,
uses 7440-43-9D, Cadmium, chromium compound-based catalyst containing, uses 7440-47-3D, Chromium, compds., uses 7440-48-4D, Cobalt, chromium compound-based catalyst containing, uses 7440-55-3D, Gallium, chromium compound-based catalyst containing, uses 7440-66-6D, Zinc, chromium compound-based catalyst containing, uses 7440-74-6D, Indium, chromium compound-based catalyst containing, uses 11113-56-7D, Chromium fluoride, chromium compound-based catalyst containing 12777-51-4D, Chromium fluoride oxide, chromium compound-based catalyst containing 56938-98-8D, Chromium chloride oxide, chromium compound-based catalyst containing

ROLE: CAT (Catalyst use); USES (Uses)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 227201-91-4P 227201-93-6P 227201-95-8P 227201-97-0P 227201-99-2P 227202-01-9P
ROLE: CAT (Catalyst use); IMF (Industrial manufacture); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 2837-89-0P, 1-Chloro-1,2,2,2-tetrafluoroethane
ROLE: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 354-33-6P, Pentafluoroethane
ROLE: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 127-18-4, Perchloroethylene, reactions 306-83-2, 1,1-Dichloro-2,2,2-trifluoroethane 7664-39-3, Hydrogen fluoride, reactions 7779-88-6, Zinc nitrate 10141-05-6, Cobalt nitrate 13138-45-9, Nickel nitrate 13473-90-0, Aluminum nitrate 13494-90-1, Gallium nitrate 13548-38-4, Chromium nitrate 13770-61-1, Indium nitrate
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

INDEX TERM: 1308-14-1P, Chromium hydroxide (Cr(OH)3)
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pentafluoroethane by fluorination of chlorinated carbon compound with hydrogen fluoride in presence of chromium-based catalyst containing indium, gallium, cobalt, nickel, zinc, or aluminum)

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD.

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